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February 16, 2017

Via ECFS

Marlene H. Dortch, Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Re: Deere & Company *Ex Parte* Submission: Mobility Fund Phase II *(WC Docket No. 10-90; WT Docket No. 10-208)*

Deere & Company ("Deere") submits this *ex parte* filing to applaud the Commission's commitment to implementing Phase II of the Mobility Fund ("MF-II") and to comment on specific recommendations submitted by Atlantic Tele-Network, Inc., AT&T Services, Inc. and Buffalo-Lake Erie Wireless Systems, Inc. ("Joint Proposal"),[1] and other parties in the record.

The MF-II offers an important opportunity to narrow the "digital divide"[2] in this country, thereby bolstering rural economies and strengthening the outlook for national economy as a whole.[3] However, to fully achieve these goals, the Commission's MF-II rules and policies must direct funds to, among other areas, currently unserved or underserved areas encompassing agricultural operations, welcome accurate coverage information from a broad category of stakeholders in the coverage data improvement process, consider upload as well as download speeds, and promote coverage on croplands by explicitly including cropland in construction milestones and coverage area requirements and/or weighting unserved geographic areas that include cropland as part of the bidding process.

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[1] Letter to Marlene H. Dortch, Secretary, Federal Communications Commission from Douglas J. Minster, Vice President, Government and Regulatory Affairs, Atlantic Tele-Network, Inc., *et. al*., Joint Proposal for Mobility Fund Phase II WT Docket No. 10-208; WC Docket No. 10-90, filed Feb. 9, 2017 ("Joint Proposal").

[2] *See, e.g.*, "There are still far too many parts of this country where broadband is unaffordable, inadequate, or nonexistent … and [Internet] access tracks income: Americans living in the poorest counties are twice as likely to lack access as those living in the most well-to-do. And access traces our rural-urban divide: 39% of rural Americans and 41% of those living on Tribal lands lack adequate access." Remarks of Commissioner Ajit Pai at the Brandery, "A Digital Empowerment Agenda" Cincinnati, Ohio, at 2 (Sept. 13, 2016). ("Pai Digital Empowerment Speech").

[3] "Mobile broadband is especially crucial for rural America. With a high-speed wireless connection, innovators can bring much-needed jobs and opportunities to parts of rural America that might otherwise be left behind." Pai Digital Empowerment Speech, at 4.

I. The MF-II Should Be Designed to Determine Funding Based on Geographic Areas Including Particularly Croplands.

Deere has long been a proponent of rules and policies that direct support of the Mobility Fund to increase wireless coverage of rural America where people live, work and travel.[4] For many in rural America, work is closely tied to the agricultural sector; active agricultural areas are vital economic drivers for rural communities and a source of livelihoods for a majority of rural Americans. The importance of wireless broadband to rural communities and to the agricultural sector, in particular, has been widely recognized.[5] Chairman Pai has highlighted the importance of wireless broadband to agricultural operations and rural communities.[6] He recently pointed out that greater access to wireless broadband gives rural communities the chance to benefit from opportunities for innovation and much-needed jobs. He specifically spoke to the benefits to precision agriculture:

> High-speed wireless connections can make America's farms more productive and efficient. Not long ago, I had the chance to visit Clear Meadow Farm, in a rural part of northern Maryland. I saw first-hand how machine-to-machine communications, GPS-controlled combines, and remote weather and soil sensors—all powered by wireless connections—can transform our nation's agriculture industry.[7]

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[4] *Connect America Fund*, Report and Order and Further Notice of Proposed Rulemaking, 26 FCC Rcd 17663, para. 53 (2011) (focusing on "mobile networks capable of delivering mobile broadband and voice service in areas where Americans live, work, or travel.") ("*2011 CAF Order*").

[5] *See, e.g.*, Letter to Chairman Tom Wheeler, FCC from United States Senators Wicker, Manchin, et al. (July 11, 2016) (bipartisan group of 26 Senators discuss the need for mobile broadband coverage on in agricultural areas); Letter to Chairman Ajit Pai, FCC, from United States Senators Wicker, Manchin, et al. (Feb. 2, 2017) (bipartisan group of 30 senators discussing the criticality of reliable high-speed mobile broadband urging the Commission to help "preserve, upgrade and expand mobile broadband in rural America" in moving forward with MF-II). CoBank, a $110 billion cooperative bank serving vital industries across rural America, recently stated "[t]he importance of broadband to farming operations should not be underestimated. ..[a]cess to broadband has huge implications for farm productivity and profitability. *Ex Parte* Letter to Marlene H. Dortch, Secretary, Federal Communications Commission, from Robert F. West, Senior Vice President, Communications, CoBank, ACB, WC docket No. 10-90; WT Docket No. 20-208, at 2 (Oct. 28, 2016). Farmers in the field able to access farm records, spreadsheets and field maps can analyze financials and logistics and make informed decisions in the field. *See also* "Farmers Harvest Gigagytes with Broadband and Wireless Technology," COBANK RURAL INFRASTRUCTURE BRIEFINGS (March 2016), *available at* http://www.cobank.com/Knowledge-Exchange/Centers-of-Excellence/~/media/Files/Searchable%20PDF%20Files/Knowledge%20Exchange/2016/Farmers%20Harvest%20Gigabytes%20Report%20%20Mar%202016.pdf ("Having farm data at your fingertips has helped make field operations. . . more efficient and timely.").

[6] *See, e.g.*, Pai Digital Empowerment Speech; Statement of FCC Commissioner Ajit Pai on Expanding Rural Broadband Deployment (Sept. 15, 2015) (noting "how critical it is for the FCC to ensure that high-speed broadband reaches all rural Americans").

[7] Pai Digital Empowerment Speech, at 5.

Deere previously submitted recommendations in the context of prior MF-Fund II proposed rules that measure broadband service and specifically target support for agricultural croplands.[8] In particular, Deere cautioned that a program that only seeks to measure broadband coverage based on population centers or road miles would overlook coverage gaps in croplands, where equal or greater economic activity is occurring — or has the potential to occur with adequate coverage.[9] Accordingly, Deere strongly supports the Joint's Proposal's call for MF-II to be designed based on geographic areas, rather than solely on road miles or population centers. MF-II funds directed solely to cover roads or population centers will not adequately address the need for wireless coverage in cropland areas but identifying geographic areas as the bidding units would potentially provide service to "roads, POPs, farm land, and other important areas within a census tract as part of a logical network build."[10]

Consistent with Deere's previous proposal, Deere further suggests that the MF-II bidding and coverage units based on geography be weighted where bids also propose to increase coverage to croplands.[11] Deere also suggests that the Commission promote coverage on croplands by explicitly including cropland in construction milestones and coverage area requirements.[12]

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[8] *See, e.g.*, *Ex Parte* Letter to Marlene H. Dortch, Secretary, Federal Communications Commission from Mark N. Lewellen, Manager, Spectrum Policy, Deere & Company, WC Docket No. 10-90; WT Docket No. 20-208 (Oct. 11, 2016); *Ex Parte* Letter to Marlene H. Dortch, Secretary, Federal Communications Commission, from Mark N. Lewellen, Manager, Spectrum Policy, Deere & Company, WC Docket No. 10-90; WT Docket No. 20-208 (Nov. 10, 2016) ("Deere Nov. Ex Parte").

[9] The Rural Wireless Association has advocated for a similar approach: "RWA supports a regime under which MFII bidding and coverage units are based on a geographic measurement – one which accounts for Cropland and other agricultural areas (e.g., pastureland, rangeland, and forestland), along with areas where energy production, tourism, and other industrial activities, such as aquaculture, occur. These are areas where the need for mobile broadband is great, but where there are no or few permanent residents." *Ex Parte* Letter to Marlene H. Dortch, Secretary, Federal Communications Commission from Caressa D. Bennett, General Counsel, Rural Wireless Association, WT Docket No 10-208, WC Docket No 10-90, October 20, 2016 ("RWA Ex Parte").

[10] Joint Proposal at Section A.

[11] Deere supports a weighted bidding system that would account for bids to serve croplands even if the Commission decides to establish eligible areas based on population or road miles rather than solely geographical areas as called for by the Joint Proposal. Deere notes that this approach requires that cropland locations are included in the Commission's rules as an overlay to Census Blocks. One potential source for cropland maps is the U.S. Geological Survey Land Use and Land Cover Data, available in Geographic Information Retrieval and Analysis System (GIRAS) and Composite Theme Grid (CTG) formats at https://water.usgs.gov/GIS/metadata/usgswrd/XML/ds240_landuse_poly.xml.

[12] Deere Nov. Ex Parte at 2; *Ex Parte* Meeting Presentation "Mobility Fund II Support for Rural Agriculture" to Wireless Telecommunications Bureau by Deere & Company, National Corn Growers Association, and American Farm Bureau Federation , WC Docket No. 10-90; WT Docket No. 20-208 at 7 (Nov. 3, 2016) ("ABC Nov. Presentation").

Because croplands are areas of economic activity where rural Americans work, this weighting could help ensure public resources are spent where demand exists.

II. A Broad Category of Stakeholders Should be Permitted to Provide Input into the Coverage Data Improvement Process

In Deere assessments of actual coverage in agricultural areas, the company has identified areas where coverage is both overstated and understated by the Commission's current method of determining coverage.[13] It is critical for the integrity and efficiency of the MF-II fund process and ultimate success of the program that data identifying unserved and underserved areas is as accurate and complete as possible. The Commission itself has recognized that existing coverage data is inaccurate.[14]

The Joint Proposal sets forth a detailed methodology for identifying census block areas that are not in fact covered by LTE but shown in the Form 477 Data as having LTE coverage.[15] Deere commends the Joint Proposal authors for the specific guidelines that would govern such submissions. However, the Joint Proposal includes a provision that severely limits the coverage data improvement process by proposing a restriction, without any explanation, that only "service providers and government entities located in or near the relevant CBs or census tracts would be eligible to participate in the data improvement process." [16]

Deere strongly opposes such a limitation and instead urges the Commission to ensure that the data improvement process welcomes the submission of on-the-ground coverage information regardless of the classification of entity providing such information. In particular, the process for determining areas eligible for MF-II funding should not preclude potential wireless customers from submitting empirical evidence to show that an area lacks mobile broadband and should be added to the list of areas eligible for MF-II funding. Ideally public funds should be dedicated to areas where there is both supply and demand and permitting potential customers to participate in the data improvement process could provide the Commission with valuable information about potential demand.

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[13] *Id.*

[14] *See* Order, *Connect America Fund*, WC Docket No. 10-90, DA 16-842, at para. 16 (Jul. 25, 2016) ("The record…demonstrates that misinterpretation of the Form 477 filing instructions is not unusual; indeed, it appears that quite a few parties have failed to correctly file their Form 477 data."); "Working Toward Mobility Fund II: Coverage Data and Analysis," Wireless Telecommunications Bureau, Press Release (Sept. 30, 2016) at 10-11 (recognizing that data on unserved road miles and population are still only approximations despite improvements to methodology). In addition, stakeholders including RWA have raised repeated concerns that "Form 477 data provides an unreliable view of mobile broadband coverage, particularly in rural areas and areas of low-population density." RWA Ex Parte at 2.

[15] Joint Proposal at Section D.5.

[16] Joint Proposal at Section C.5.

Moreover, service providers and governmental entities in or near the CBs may be responding to priorities that are different from other stakeholders and may not be in a positon to devote the human and technical resources needed to measure areas that do not conform to those priorities. Local governmental entities, for example, may not have sufficient resources to test and submit data improvement recommendations. Similarly, potential service providers may have limited resources to perform tests in supposedly covered areas that are not adjacent to their current service area.[17] In either case, the Commission should accept credible and otherwise conforming coverage data regardless of the classification of the entity generating and submitting the data. Stakeholders willing to invest the time and resources to collect improvement data meeting the Commission's specific requirements and standards should be permitted to participate in the process. If the information submitted is credible, complete, and conforms to reasonable format and other rules, the Commission should make sure that it will have the benefit of as much information as may be made available.

III. Initial Classification and Data Improvement Process Should Measure Upload Speeds

The Joint Proposal defines LTE service as mobile wireless service with a minimum average outdoor download speed of at least 5 Mbps.[18] Winners of MF-II support will be obligated to deploy and maintain mobile wireless network capable of providing LTE coverage of at least 5 Mbps average download speed over the required number of eligible square miles in the eligible CBs.[19] Deere urges the Commission to consider identifying a minimum average upload speed as well as download speed to support precision agriculture techniques which are necessary to meet the ever more demanding yield and efficiency requirements that farmers face. The growing need to communicate and share data in real time from in-field agricultural operations includes the need to upload data that reflects field-status such as terrain, irrigation, seeding, application of fertilizer and pesticides, and equipment status such as repair information, fuel, load status, etc. With a minimum average upload speed, MF-II support will help farmers to take advantage of advanced telematics and agronomic analysis integral to precision agriculture.

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[17] *Ex Parte* Letter to Marlene H. Dortch, Secretary, Federal Communications Commission from David LaFuria, Counsel for United States Cellular Corporation, WT Docket No 10-208, WC Docket No 10-90, February 14, 2017 (arguing that it "will be extraordinarily difficult for carriers to meet [detailed drive testing and application testing protocols] within the proposed 60-day window for a challenge process").

[18] Joint Proposal at Section A. w.

[19] Joint Proposal at Section E.1.a.

IV. Coverage Milestones Should Address Deployment on Cropland

The Joint Proposal also sets forth MF II Service and Deployment obligations that should be "clearly known before the auction occurs and should not change or evolve over the course of the program term."[20] Deere agrees with the Joint Proposal that the ultimate success of the program depends on all participants knowing exactly what will be expected of them when they bid." [21] To this end, Deere suggests that the Commission promote coverage on agricultural croplands by adopting deployment rules that explicitly include cropland in construction milestones and coverage area requirements.[22] If, for example, a Census Block has an 80% coverage area requirement, the winning bidder should be required to show what cropland, population centers, and/or road miles are included in the newly deployed coverage area.

Conclusion

Cropland is captive to the geographies, soils, climate, water and land availability required for growing food, leaving the farmer and farm workers and the many others working in the U.S. agricultural sector wholly dependent on whatever public infrastructure is made available to croplands. This is as true of broadband deployment today as it was of rural electrification in the 20th Century. Connectivity in cropland is necessary to serve the significant U.S. agricultural sector to meet growing worldwide demand for food. As recently stated by Senators Wicker and Manchin and the bipartisan group of 28 other Senators, leaving these areas unserved by mobile broadband is inconsistent with the Commission's statutory directive. These facts, coupled with the USF mandate for comparable telecommunications and information services to be provided in all regions of the country, reinforces the imperative for Commission MF-II policies to target funds to the nation's agricultural cropland.

/s/

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cc: Nicholas Degani
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[20] Joint Proposal at Section E.

[21] Joint Proposal at Section E.

[22] *See, supra* note 12.

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